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ABSTRACT

This article reflects one session of a course in thinking and communicating for Pace University (New York) faculty. The purpose of the course was to heighten awareness that language can seriously misrepresent events which it describes, thus affecting students' ability to perceive, evaluate, and make day-to-day decisions. Beginning with a concrete demonstration, the two worlds of language are emphasized: the nonverbal world (observation through senses) and the symbolic world (mapping or coding observations). A riddle serves to represent how poorly verbal maps fit the territories being talked about, thereby contributing to an inaccurate understanding of what is being observed and what is being said. To illustrate the important point of misperceiving directions due to language structure, a test composed of six true/false questions was given to the faculty. (The test, concepts of sentence structures, and specific examples are included.) To aid in clarification between maps and territories, it was suggested that noun-predicate structures should be modified to reveal the dynamics of who, what, where, when, and in what context. It was noted that the principle of remembering that things keep changing is important to accuracy in thinking and communicating, especially when emotionally laden or highly abstract subjects is stressed. For practice, the faculty participated in an exercise of changing subject-predicate generalizations to fit with what they realize is a changing reality; examples are included. (DJR)

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A COURSE IN THINKING FOR INTERDISCIPLINARY FACULTY GROUPS

(Paper presented at ISII 1986: Thinking Across the Disciplinary Conference, Atlanta, GA--October 9-11, 1986.)

This article is derived from one seminar on Thinking & Communicating created by and for faculty at Pace University in New York.(1) Faculty meet for two hours per week. They apply the topics to their own disciplines and also prepare to teach the subject as a whole under the heading of critical thinking. Enthusiastically, they suggested our materials and procedures might be of value to groups outside the university.

The Map is Not the Territory

An obsolete street map can mislead a visitor to a city. Streets might have been re-named, re-routed, made inaccessible or even obliterated as the city changed. Language, like a map that ignores a changing reality, can make us believe in certainty that doesn't exist. However, we can take precautions against its false promises of security.

In this seminar, we usually start with a concrete demonstration, followed by a discussion and practice exercises. To remind a class to think of language as a map *of* something else, or as a code *for* something else, I present the riddle:

"Whatever I say something is, it is not."

If the class doesn't perceive the riddle's meaning, I underline the word "say." Whatever I *say* about something is not the same as the something itself. The map is not the territory.

If some people still miss the point, I ask the class to close their eyes. I crumple a piece of paper and ask, "What did you *hear*?" Usually someone says, "I heard a paper crumpling, "to which I reply, "Did anyone

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hear the words 'paper crumpling'?" No one did. If they are still mystified, I take a piece of white chalk and write on the board "Green." I ask, "What color is that?" Some reply it's green, others that it is white. Most now recognize the crucial difference between the word "green" and the non-verbal experience of white. To clinch the point, I write the word "water" on the board and ask if anyone can drink it. No one can.

Two Worlds: Verbal and Non-verbal

Thus we emphasize the easily forgotten truth of two worlds: one is the non-verbal world that we observe with our senses and various other instruments. The other is the world of symbols with which we map or codify what we observe. Although we can symbolize with numbers or pictures, more often we use language. Although we realize that words are not the things they represent, often we do not realize how poorly our verbal maps fit the territories we're talking about. During the course on thinking & communicating, we work at finding better matches between what we observe and what we say. Such efforts may be vital to accuracy, and accuracy may sometimes be vital to human welfare.

The short test below illustrates some important points.

Instructions: Below are some statements-- some generalizations about what people have observed. Mark each one TRUE; or, if it is not always true, mark it FALSE.

____1. Apples are red.

____2. Milk is good for people.

____3. One and one make two.

____4. The speed of sound is 741.5 miles per hour.

____5. AIDS causes death

____6. Reagan is a Republican.

Even some of the most sophisticated college professors will mark one or more of the above sentences as TRUE. All items should be marked FALSE, however, for reasons to follow.

One reason people get some answers "wrong" is that they misperceive the directions. The instructions said an item should be called FALSE if it is not always TRUE--an unusual definition of the word "false." From our many years of true-false tests in school we have been programmed to believe a thing is either true or false. Thus, the mere sight of the words can trigger our laying the old map upon a new territory.

The World of Process

Another reason for error is that we can be fooled by the structure of the language. The words come across as authoritative; as factual, definite and final. But nothing in nature is totally factual, much less final. What goes on in the non-verbal world are ever-changing processes, phenomena that don't stand still. Our static language as a map doesn't fit non-verbal goings on. For example, apples are not always red; they may be green or yellow. More important, any given apple, if examined closely, will reveal several colors. Furthermore, even as we hold one under observation it changes color, becoming ever so slightly more brown. Eventually it will turn mostly brown and then black. The color of apples all depends upon---.

Milk is milk you say? What is called milk may be raw or pasteurized, containing small to lethal amounts of bacteria. If it is derived from cows, it might contain enough fat to grow a calf but bloat a baby. Mother's milk could contain immunizing agents while powdered milk could lack vitamins or contain harmful hormones. What kind of milk are we talking

about? For what kind of people is it intended?

Do one and one make two? Always? Yes, but only by definition in the symbolic world of arithmetic. However, mixing one unit of alcohol with one unit of water results in something less than two units. In nature, substances when combined may mix, evaporate, synergize, turn into gas, or even explode. What, for example, would one stick of dynamite plus one lighted cigarette equal? It could be vital to know that one jigger of alcohol plus one tranquilizer might result in one driver asleep at the wheel.

Being aware that changes are not necessarily additive can keep us alert to possible disaster. For example, just one more critical remark to a spouse can trigger her act of violence. One less dessert in the prison cafeteria can be the last straw preceding a riot. One degree of warming the earth's atmosphere could flood whole geographic areas. On the positive side, one more illustration might cause a student to reorganize a thought pattern. One more effort might turn a skeptic into an ally. Adding just one more person to an organization might change the whole group's morale.

Well, you might say, the speed of sound has been known to be 741.5 miles per hour for decades. It's a scientifically accepted fact, isn't it? Yes, at least it was considered a fact until this year(2) when George Wong discovered the figure to be (for now) 741.1 miles per hour. A difference that matters? Not to most people. But the difference could be crucial to submarine warfare or to the engineering of aeroplanes.

We must remember that scientific formulations, equations, facts belong to the world of maps, codes and symbols. At a symbolic level, they may

be repeated until they seem absolutely true. At the non-verbal level, however, scientists are much less sure about what is absolutely true. Habitually, they pursue the fine tuning of all standards. First, they know that measurements are rarely, if ever, identical. There are too many variations in observers, in the observing instruments, and in the things observed. Some things change just by virtue of being observed. We know that equations about the speed or size of anything represent averages and generalizations about wide variations in nature. Sound speed changes with the direction of the wind; heat and humidity can make a difference. Secondly, instruments of observation keep developing. Newton's calculations were wrong by 15%; he did not have such finely calibrated instruments as scientists have today.

Whether we use the word AIDS (or any other disease word) as one thing or as a changing process can make an enormous difference in personal hope, community attitudes and government efforts. Our best information so far [3] indicates that AIDS appears to behave differently in different persons and even in different countries. Fast moving research may change definitions of symptoms, treatment measures, and ultimately prospects for cure.

Surely, however, we can say that Ronald Reagan is a Republican. Right? Yes, but is it the truth, the whole truth, and nothing but the truth? At one time he said he was a registered Democrat. Could he now be in the process of becoming something else again? What do we mean by Republican? Does a person have to believe in every plank of the platform to <u>be</u> a Republican? If not, then how many planks of the party can he disagree with without losing his category? Are the planks of the party the same in 1986 as in 1956 or in 1886? How is Republicanism changing over time?

How is Ronald Reagan changing? Might there be some political figures other than Republicans whom he'd favor and even vote for? Can we even be absolutely sure that Reagan voted for himself in the last election? The point is to be aware that any important figure may be changing in crucial ways. For example, Edmund P. Wilson, once an intelligence agent, changed into a rogue selling arms to enemies. People's political beliefs and moral values, while usually stable and predictable, can change gradually or even radically. One needs only to examine one's own history to see examples.

Subject-Predicate Language: Need for Vigilance

Let's say we have acknowledged that the six statements above are not always true. What about the six or sixteen thousand others that could be listed? No one can be expected to have enough knowledge to perceive all the possible exceptions to each one. There must be a general point to all this that can be useful to any literate person.

The secret lies in recognizing what statements like the above have in common. Notice that the structure of each sentence follows a pattern: a subject followed by a predicate. Milk is---. Apples are---. One and one make---. Reagan is---. AIDS causes---. What we need is to develop the habit of red-flagging such structures. We must remember the general principle that whereas nouns like apple, Reagan and milk seem like static phenomena, what they refer to non-verbally cannot be static. Static nouns are misleading maps of territories that have, are and will be changing. Therefore, we know that what nouns are, have, or do won't stand still either. Immediately, we can adopt a skeptical stance whenever confronted by subject-predicate structures. We can then ask appropriate questions

such as: When? Where? According to whom? As measured by what or whom? For whom? In what circumstances? What do they mean by? In other words, the noun-predicate structure, to be a good map of a changing territory, must be modified to reveal the dynamic variables of who, what, where, when and in what context.

If this principle of remembering that things keep changing is important to accuracy in thinking or communicating about milk or apples, it is even more important when dealing with emotionally laden or highly abstract subjects. For example, consider such words as freedom, communism, terrorist, government official, Libya, capitalism, the New York Times, fundamentalist, etc. Our "languaging" them in nouns makes them seem like static things, stereotypes even. Yet each one could have multiple meanings, depending upon who uses them in what time, place and context.

The noun 'freedom", if perceived as a thing, could be falsely interpreted as something people either have or don't have. Some countries seem to have freedom while others have none at all. Adolescents can drug themselves to death in their fight for freedom from parents whom they think give them no freedom. Freedom should be seen as a word reflecting many variables and many shades of meaning. Relevant questions would be: What do you and they mean by it? Freedom for whom to do what, when, how, in what circumstances? How much freedom should an 8 year old have in a classroom, a theater, in the privacy of her own bedroom? To what extent can a government protect the freedom of business leaders to maximize profits while protecting the population's right to freedom from toxic wastes?

Take a sentence like, "Productivity improvement means lowering costs and increasing labor's output." The sentence sounds authoritative, logical

and sensible. But the subject-predicate structure ("Productivity improvement means...") puts us on the alert. At the non-verbal level, the subject of productivity won't stand still long enough for us to take a snap-shot and offer a static picture. In fact, paradoxically, according to a Harvard Business Review article[4] we find that lowering costs and badgering employees to produce more is not only least effective but also vulnerable to back-lash. Apparently, spending more for modern equipment, a better location and more innovative managers works better.

Antiodotes for Misleading Maps

In our course, we ask the faculty to go through the motions of changing subject-predicate generalizations to fit what they realize is a changing reality. For example, you might now want to practice modifying the six sentences above. How many ways can you re-phrase "Apples are red," using the questions: According to whom? Which one? When? As measured by? In what context? etc. Now try the word "terrorist." Without practicing such modifications, tedious though they may be, we can easily remain lulled into believing the world is just like our obsolete maps.

Some people object that others don't like writing that contains qualifications. They say people prefer to know exactly what's what with no waffling. To this objection I answer that if people prefer a false sense of security, they may prefer even less to be misled by predictions that fail. Of course, when speaking of apples, multiple qualifications may be a deadly bore. The point, however, is to recognize when accuracy is important. We must not arbitrarily accept or reject the words of a politician, priest or knave. Nouns and categories refer to events that

may be neither permanent nor reliable. Knowing the specifics through asking questions improves the match between map and territory.

Summary

This article reflects one session of a course in Thinking & Communicating for Pace University faculty, a course adaptable for many other groups.

The purpose is to heighten awareness that language can seriously misrepresent the events which it describes.

Recognizing subject-predicate structures can alert us to the need for asking such questions as: According to whom? Which one? Where? At what time? In what context? etc.

FOOTNOTES

(1) The Thinking & Learning Center of Pace University is endowed by Robert K. Straus in memory of J.S. Bois, A. Korzybski, J. Piaget, F.J. Roethlisberger, and Sir A. Zimmern to further students' awareness of how they perceive, evaluate and make decisions day to day. Subject matter is based upon a Roots of Knowledge approach to critical thinking. Many formulations derive from epistemics and general semantics.

(2) Gleick, James, "Scientist Corrects an Old Error on Hallowed Speed of Sound." The New York Times, 24 June, 1986, p. C1

(3) Rowe, Mary P., Malcolm Russel-Einhorn, and Michael A. Baker, "The Fear of AIDS." Harvard Business Review, July-August 1986, p. 28.

(4) Skinner, Wickham. "The Productivity Paradox." Harvard Business Review, July-August, 1986, p. 55.